CONTENTS OF VOLUME 25

JANUARY 1995 VOLUME 25 NUMBER 1

COCATS GUIDELINES

1 **Guidelines for Training in Adult Cardiovascular Medicine: Core Cardiology Training Symposium (COCATS)** *Joseph S. Alpert, Chairman*

REVIEW ARTICLE

35 **Advance Directives: Do They Work?** *Linda Leah Emanuel*

CLINICAL STUDIES

Electrophysiology

39 **Modulation of Atrioventricular Conduction by Ablation of the "Slow" Atrioventricular Node Pathway in Patients With Drug-Refractory Atrial Fibrillation or Flutter** *Paolo Della Bella, Corrado Carbucicchio, Claudio Tondo, Stefania Riva*

47 **Characterization of Return Cycle Responses Predictive of Successful Pacing-Mediated Termination of Ventricular Tachycardia** *David J. Callans, Bruce G. Hook, Raman L. Mitra, Mark E. Josephson*

54 **Long-Term Outcome of Verapamil-Sensitive Sustained Left Ventricular Tachycardia in Patients Without Structural Heart Disease** *Tohru Ohe, Naohiko Aihara, Shiro Kamakura, Takashi Kurita, Wataru Shimizu, Katsuro Shimomura*

59 **A New Form of Long QT Syndrome Associated With Syndactyly** *Melinda L. Marks, Sandra L. Whisler, Carol Clericuzio, Mark Keating*

65 **Limitations of Head-Up Tilt Test for Evaluating the Efficacy of Therapeutic Interventions in Patients With Vasovagal Syncope: Results of a Controlled Study of Etilefrine Versus Placebo** *Angel Moya, Gaietà Permanyer-Miralda, Jaume Sagrista-Sauleda, Xavier Carne, Teresa Rius, Lluis Mont, Jordi Soler-Soler*

70 **Characterization of Subcutaneous Microvascular Blood Flow During Tilt Table-Induced Neurally Mediated Syncope** *David G. Benditt, Meng-Yang Chen, Ronnell Hansen, Jeffrey Buetikofer, Keith Lurie*

Coronary Artery Disease

76 **Influence of Age and Gender on the Presence of Coronary Calcium Detected by Ultrafast Computed Tomography** *Stephen Devries, Christopher Wolfkiel, Benjamin Fusman, Husam Bakdash, Aziz Ahmed, Paul Levy, Eva Chomka, George Kondos, Edward Zajac, Stuart Rich*

Left Ventricular Hypertrophy

83 **Association of Carotid Atherosclerosis and Left Ventricular Hypertrophy** *Mary J. Roman, Thomas G. Pickering, Joseph E. Schwartz, Riccardo Pini, Richard B. Devereux*

91 **Influence of Left Ventricular Hypertrophy on Left Ventricular Function During Dynamic Exercise in the Presence or Absence of Coronary Artery Disease** *Toshikazu Sobue, Mitsuhiro Yokota, Mitsunori Iwase, Hitoshi Ishihara*

Valvular Heart Disease

99 **Adenosine Pharmacologic Stress Myocardial Perfusion Tomographic Imaging in Patients With Significant Aortic Stenosis: Diagnostic Efficacy and Comparison of Clinical, Hemodynamic and Electrocardiographic Variables With 100 Age-Matched Control Subjects** *Bruce Samuels, Hosen Kiat, John D. Friedman, Daniel S. Berman*

107 **Coagulation Activity Is Increased in the Left Atrium of Patients With Mitral Stenosis** *Keiji Yamamoto, Uichi Ikeda, Yoshitane Seino, Hideaki Mito, Hideyuki Fujikawa, Hiromichi Sekiguchi, Kazuyuki Shimada*

113 **Left Ventricular Function in Chronic Mitral Regurgitation: Preoperative and Postoperative Comparison** *William J. Corin, Gabor Sütsch, Tomoyuki Murakami, Otto N. Krogmann, Marko Turina, Otto M. Hess*

122 **Effect of Dobutamine Stress Echocardiography on Mitral Regurgitation** *Sheila K. Heinle, Frank D. Tice, Joseph Kisslo*

128 **Observations Suggesting a High Incidence of Exercise-Induced Severe Mitral Regurgitation in Patients With Mild Rheumatic Mitral Valve Disease at Rest** *Marc D. Tischler, Robert W. Battle, Madhumita Saha, Joelyn Niggel, Martin M. LeWinter*

134 **Anterior Leaflet Procedures During Mitral Valve Repair Do Not Adversely Influence Long-Term Outcome** *Eugene A. Grossi, Aubrey C. Galloway, Martin LeBoutillier III, Bryan Steinberg, F. Gregory Baumann, Julie Delianides, Frank C. Spencer, Stephen B. Colvin*

137 **Pseudoaneurysms of the Mitral–Aortic Intervalvular Fibrosa: Dynamic Characterization Using Transesophageal Echocardiographic and Doppler Techniques** *Imran Afridi, Maria A. Apostolidou, Robert M. Saad, William A. Zoghbi*

Heart Failure

146 **Evidence for Reduction of Norepinephrine Uptake Sites in the Failing Human Heart** *Michael Böhm, Karl La Rosée, Robert H. G. Schwinger, Erland Erdmann*

154 **Predictors of Systolic and Diastolic Improvement in Patients With Dilated Cardiomyopathy Treated With Metoprolol** *Eric J. Eichhorn, Christian M. Heesch, Richard C. Risser, Lucille Marcoux, Barbara Hatfield*

163 **Improvement in Exercise Capacity of Candidates Awaiting Heart Transplantation** *Lynne Warner Stevenson, Anthony E. Steimle, Gregg Fonarow, Michael Kermani, Donna Kermani, Michele A. Hamilton, Jaime D. Moriguchi, Julie Walden, Jan H. Tillisch, Davis C. Drinkwater, Hillel Laks*

Heart Transplantation

171 **Incidence and Severity of Transplant Coronary Artery Disease Early and up to 15 Years After Transplantation As Detected by Intravascular Ultrasound** *Peter R. Rickenbacher, Fausto J. Pinto, Adrian Chenzbraun, Javier Botas, Neil P. Lewis, Edwin L. Alderman, Hannah A. Valantine, Sharon A. Hunt, John S. Schroeder, Richard L. Popp, Alan C. Yeung*

Interventional Cardiology

178 **Clinical Outcome of Deferring Angioplasty in Patients With Normal Translesional Pressure-Flow Velocity Measurements** *Morton J. Kern, Thomas J. Donohue, Frank V. Aguirre, Richard G. Bach, Eugene A. Caracciolo, Thomas Wolford, Carol J. Mechem, Michael S. Flynn, Bernard Chaitman*

Surgery

188 **Internal Thoracic Artery Grafts: 20-Year Clinical Follow-Up** *Airlie A. C. Cameron, George E. Green, David A. Brogno, John Thornton*

193 **Relation of Saphenous Vein Graft Obstruction to Serum Cholesterol Levels** *Hiroyuki Daida, Hisashi Yokoi, Hiroshi Miyano, Hiroshi Mokuno, Hiroyuki Satoh, Thomas E. Kottke, Yasuyuki Hosoda, Hiroshi Yamaguchi*

198 **Right Coronary Artery Stenosis: An Independent Predictor of Atrial Fibrillation After Coronary Artery Bypass Surgery** *Lisa A. Mendes, Gilbert P. Connelly, Patrice A. McKenney, Philip J. Podrid, L. Adrienne Cupples, Richard J. Shemin, Thomas J. Ryan, Ravin Davidoff*

MYOCARDIAL INFARCTION

203 **Thrombin Generation and Activity During Thrombolysis and Concomitant Heparin Therapy in Patients With Acute Myocardial Infarction** *Piera Angelica Merlini, Kenneth A. Bauer, Luigi Oltrona, Diego Ardissino, Alessandra Spinola, Marco Cattaneo, Marco Broccolino, Pier Mannuccio Mannucci, Robert D. Rosenberg*

210 **Rest–Redistribution Thallium-201 Scintigraphy to Determine Myocardial Viability Early After Myocardial Infarction** *Carl T. Lomboy, Douglas S. Schulman, Howard P. Grill, Angel R. Flores, Judith E. Orie, Jerome E. Granato*

218 **Frequent Reocclusion of Patent Infarct-Related Arteries Between 4 Weeks and 1 Year: Effects of Antiplatelet Therapy** *Harvey D. White, John K. French, Andrew W. Hamer, Michael A. Brown, Barbara F. Williams, John A. Ormiston, David B. Cross*

224 **Coronary Reactivity to Nitroglycerin: Intravascular Ultrasound Evidence for the Importance of Plaque Distribution** *Masakazu Yamagishi, Steven E. Nissen, David C. Booth, John C. Gurley, Jun Koyama, Shigeo Kawano, Anthony N. DeMaria*

MYOCARDIAL ISCHEMIA

231 **Medical Treatment to Reduce Total Ischemic Burden: Total Ischemic Burden Bisoprolol Study (TIBBS), a Multicenter Trial Comparing Bisoprolol and Nifedipine** *Thomas von Arnim, for the TIBBS Investigators*

CARDIOMYOPATHY

239 **Correlation Between Cardiac Involvement and CTG Trinucleotide Repeat Length in Myotonic Dystrophy** *Paola Melacini, Carla Villanova, Elisabetta Menegazzo, Giuseppe Novelli, Gianantonio Danieli, Giulio Rizzoli, Giuseppe Fasoli, Corrado Angelini, Gianfranco Buja, Manuela Miorelli, Bruno Dallapiccola, Sergio Dalla Volta*

PHYSIOLOGY

246 **Angiotensin II Inhibits the Forearm Vascular Response to Increased Arterial Pressure in Humans** *Steven R. Goldsmith, Gregory J. Hasking*

251 **Muscular and Cardiac Adenosine-Induced Pain Is Mediated by A_1 Receptors** *Achille Gaspardone, Filippo Crea, Fabrizio Tomai, Francesco Versaci, Maria Iamele, Gaetano Gioffrè, Luigi Chiariello, Pier Agostino Gioffrè*

EXPERIMENTAL STUDIES

258 **Recovery and Viability of an Acute Myocardial Infarct After Transmyocardial Laser Revascularization** *Keith A. Horvath, Wendell J. Smith, Rita G. Laurence, Frederick J. Schoen, Robert F. Appleyard, Lawrence H. Cohn*

264 **Doppler Evaluation of Severity of Mitral Regurgitation: Relation to Pulmonary Venous Blood Flow Patterns in an Animal Study** *Dag E. Teien, Michael Jones, Takahiro Shiota, Izumi Yamada, David J. Sahn*

269 **Potentiation of Endogenous Nitric Oxide With Superoxide Dismutase Inhibits Platelet-Mediated Thrombosis in Injured and Stenotic Arteries** *Yuan Yuan Meng, Jeffrey Trachtenburg, Una S. Ryan, Dana R. Abendschein*

EDITOR'S PAGE

276 **Academic Subspecialties at the Crossroad** *William W. Parmley*

SPECIAL SECTIONS

ACC NEWS

278 **President's Page: Work Force Issues in Cardiology** *Daniel J. Ullyot*

280 LETTERS TO THE EDITOR

FEBRUARY 1995 VOLUME 25 NUMBER 2

CLINICAL STUDIES

HEART FAILURE

281 **Mechanism of Hemodynamic Improvement by Dual-Chamber Pacing for Severe Left Ventricular Dysfunction: An Acute Doppler and Catheterization Hemodynamic Study** *Rick A. Nishimura, David L. Hayes, David R. Holmes, Jr., A. Jamil Tajik*

289 **Effect of Long-Term Digoxin Therapy on Autonomic Function in Patients With Chronic Heart Failure** *Henry Krum, J. Thomas Bigger, Jr., Rochelle L. Goldsmith, Milton Packer*

295 **Differential Effects of Dobutamine and a Phosphodiesterase Inhibitor on Early Diastolic Filling in Patients With Congestive Heart Failure** *Kohzo Nagata, Mitsunori Iwase, Toshikazu Sobue, Mitsuhiro Yokota*

VALVULAR HEART DISEASE

305 **Progression of Aortic Stenosis in 394 Patients: Relation to Changes in Myocardial and Mitral Valve Dysfunction** *Sorin J. Brener, Carol I. Duffy, James D. Thomas, William J. Stewart*

CORONARY ARTERY DISEASE

311 **Quantitative Arteriography of Apparently Normal Coronary Segments With Nearby or Distant Disease Suggests Presence of Occult, Nonvisualized Atherosclerosis** *Wing-Hung Leung, Edwin L. Alderman, Tommy C. Lee, Michael L. Stadius*

318 **Multivariate Predictors of Intravascular Ultrasound End Points After Directional Coronary Atherectomy** *Fadi A. Matar, Gary S. Mintz, Ellen Pinnow, Saturnino P. Javier, Jeffrey J. Popma, Kenneth M. Kent, Lowell F. Satler, Augusto D. Pichard, Martin B. Leon*

325 **Coronary Flow Reserve Assessment by Dobutamine Transesophageal Doppler Echocardiography** *Marcus F. Stoddard, Charles R. Prince, Glenn T. Morris*

333 **Development and Evaluation of the Seattle Angina Questionnaire: A New Functional Status Measure for Coronary Artery Disease** *John A. Spertus, Jennifer A. Winder, Timothy A. Dewhurst, Richard A. Deyo, Janice Prodzinski, Mary McDonell, Stephan D. Fihn*

CORONARY PHYSIOLOGY

342 **Effects of Brain (B-Type) Natriuretic Peptide on Coronary Artery Diameter and Coronary Hemodynamic Variables in Humans: Comparison With Effects on Systemic Hemodynamic Variables** *Ken Okumura, Hirofumi Yasue, Hiromi Fujii, Kiyotaka Kugiyama, Kozaburo Matsuyama, Michihiro Yoshimura, Michihisa Jougasaki, Koichi Kikuta, Hideji Kato, Hidenori Tanaka, Hitoshi Sumida, Kazuwa Nakao*

MYOCARDIAL ISCHEMIA

349 **Intermittent Transdermal Nitrates Do Not Improve Ischemia in Patients Taking Beta-Blockers or Calcium Antagonists: Potential Role of Rebound Ischemia During the Nitrate-Free Period** *S. Ben Freedman, Bipin V. Daxini, Diana Noyce, David T. Kelly*

356 **Enhanced Insulin Response Relates to Acetylcholine-Induced Vasoconstriction in Vasospastic Angina** *Michio Shimabukuro, Tatsushi Shinzato, Satoshi Higa, Takao Chibana, Hisashi Yoshida, Fumio Nagamine, Keiji Murakami, Nobuyuki Takasu*

INTERVENTIONAL CARDIOLOGY

362 **Effect of High Dose Angiotensin-Converting Enzyme Inhibition on Restenosis: Final Results of the MARCATOR Study, a Multicenter, Double-Blind, Placebo-Controlled Trial of Cilazapril** *David P. Faxon, on Behalf of the Multicenter American Research Trial With Cilazapril After Angioplasty to Prevent Transluminal Coronary Obstruction and Restenosis (MARCATOR) Study Group*

370 **Predictors of In-Hospital and 6-Month Outcome After Acute Myocardial Infarction in the Reperfusion Era: The Primary Angioplasty in Myocardial Infarction (PAMI) Trial** *Gregg W. Stone, Cindy L. Grines, Kevin F. Browne, Jean Marco, Donald Rothbaum, James O'Keefe, Geoffrey O. Hartzler, Paul Overlie, Bryan Donohue, Noah Chelliah, Gerald C. Timmis, Ronald Vlietstra, Michelle Strzelecki, Sylvia Puchrowicz-Ochocki, William W. O'Neill*

378 **Quantitative Angiographic Comparison of Elastic Recoil After Coronary Excimer Laser-Assisted Balloon Angioplasty and Balloon Angioplasty Alone** *Sipke Strikwerda, Eline Montauban van Swijndregt, Rein Melkert, Patrick W. Serruys*

MYOCARDIAL INFARCTION

387 **A Prospective Study of Plasma Fish Oil Levels and Incidence of Myocardial Infarction in U.S. Male Physicians** *Eliseo Guallar, Charles H. Hennekens, Frank M. Sacks, Walter C. Willett, Meir J. Stampfer*

CARDIAC SURGERY

395 **Coronary Artery Bypass Graft Surgery After Thrombolytic Therapy in the Thrombolysis in Myocardial Infarction Trial, Phase II (TIMI II)** *Bernard J. Gersh, James H. Chesebro, Eugene Braunwald, Costas Lambrew, Eugene Passamani, Rachel E. Solomon, Allan M. Ross, Richard Ross, Michael L. Terrin, Genell L. Knatterud and the TIMI II Investigators*

403 **Incremental Prognostic Value of Exercise Thallium-201 Myocardial Single-Photon Emission Computed Tomography Late After Coronary Artery Bypass Surgery** *Walter Palmas, Scott Bingham, George A. Diamond, Timothy A. Denton, Hosen Kiat, John D. Friedman, Debra Scarlata, Jamshid Maddahi, Ishac Cohen, Daniel S. Berman*

410 **Outcome of Cardiac Surgery for Carcinoid Heart Disease** *Heidi M. Connolly, Rick A. Nishimura, Hugh C. Smith, Patricia A. Pellikka, Charles J. Mullany, Larry K. Kvols*

LEFT VENTRICULAR HYPERTROPHY

417 **Electrocardiographic Identification of Increased Left Ventricular Mass by Simple Voltage–Duration Products** *Peter M. Okin, Mary J. Roman, Richard B. Devereux, Paul Kligfield*

424 **Should Echocardiography Be Performed to Assess Effects of Antihypertensive Therapy? Test–Retest Reliability of Echocardiography for Measurement of Left Ventricular Mass and Function** *John S. Gottdiener, Sue V. Livengood, Patricia S. Meyer, Gary A. Chase*

ELECTROPHYSIOLOGY

431 **Comparison of Initial Detection and Redetection of Ventricular Fibrillation in a Transvenous Defibrillator System With Automatic Gain Control** *Charles I. Berul, David J. Callans, David S. Schwartzman, Mark W. Preminger, Charles D. Gottlieb, Francis E. Marchlinski*

437 **Relation Between Heart Rate Variability and Spontaneous and Induced Ventricular Arrhythmias in Patients With Coronary Artery Disease** *Juhani O. Valkama, Heikki V. Huikuri, M. Juhani Koistinen, Sinikka Yli-Mäyry, K. E. Juhani Airaksinen, Robert J. Myerburg*

444 **Localization and Radiofrequency Catheter Ablation of Left-Sided Accessory Pathways During Atrial Fibrillation: Feasibility and Electrogram Criteria for Identification of Appropriate Target Sites** *Gerhard Hindricks, Hans Kottkamp, Xu Chen, Stephan Willems, Wilhelm Haverkamp, Mohammad Shenasa, Günter Breithardt, Martin Borggrefe*

452 **Left Atrial Appendage Thrombus Is Not Uncommon in Patients With Acute Atrial Fibrillation and a Recent Embolic Event: A Transesophageal Echocardiographic Study** *Marcus F. Stoddard, Phillip R. Dawkins, Charles R. Prince, Naser M. Ammash*

PEDIATRIC CARDIOLOGY

460 **Determinants of Successful Balloon Valvotomy in Infants With Critical Pulmonary Stenosis or Membranous Pulmonary Atresia With Intact Ventricular Septum** *Raymond T. Fedderly, Thomas R. Lloyd, Alan M. Mendelsohn, Robert H. Beekman*

466 **Primary Pulmonary Hypertension in Children: Clinical Characterization and Survival** *Julio Sandoval, Otto Bauerle, Arturo Gomez, Andrés Palomar, Maria Luisa Martínez Guerra, Maria Elena Furuya*

475 **Fibrous Obstruction Within the Left Ventricular Outflow Tract Associated With Ventricular Septal Defect: A Pathologic Study** *Norman H. Silverman, Leon M. Gerlis, Siew Yen Ho, Robert H. Anderson*

482 **Delineation of Site, Relative Size and Dynamic Geometry of Atrial Septal Defects by Real-Time Three-Dimensional Echocardiography** *Gerald R. Marx, David R. Fulton, Natesa G. Pandian, Michael Vogel, Qi-Ling Cao, Achi Ludomirsky, Alain Delabays, Lissa Sugeng, Berthold Klas*

491 **Presentation and Attrition in Complex Pulmonary Atresia** *Kate Bull, Jane Somerville, Ed Ty, David Spiegelhalter*

NEW METHODS

500 **Clinical Evaluation of Left Heart Doppler Contrast Enhancement by a Saccharide-Based Transpulmonary Contrast Agent** *Helene von Bibra, George Sutherland, Harald Becher, Joachim Neudert, Petros Nihoyannopoulos, for the Levovist Cardiac Working Group*

EXPERIMENTAL STUDIES

509 **Visually Discernible Myocardial Echocardiographic Contrast After Intravenous Injection of Sonicated Dextrose Albumin Microbubbles Containing High Molecular Weight, Less Soluble Gases** *Thomas R. Porter, Feng Xie*

EDITORIAL REVIEW

516 **Restenosis After Percutaneous Transluminal Coronary Angioplasty: Have We Been Aiming at the Wrong Target?** *Jesse W. Currier, David P. Faxon*

ACC/AHA TASK FORCE REPORT

521 **Guidelines for Clinical Use of Cardiac Radionuclide Imaging** *James L. Ritchie, Chairman*

EDITOR'S PAGE

548 **The Editor's Meet—A New Alliance** *William W. Parmley*

SPECIAL SECTIONS

ACC News

549 **President's Page: What Concerns Us About Managed Care?** *Daniel J. Ullyot*

551 **Letters to the Editor**

556 **Corrections**

FEBRUARY 1995 VOLUME 25 NUMBER 2 (SPECIAL ISSUE) ABSTRACTS

Abstracts of Original Contributions to Be Presented at the American College of Cardiology 44th Annual Scientific Session March 19–22, 1995, New Orleans, Louisiana

ii **Program**

1A **Original Contributions: Young Investigators Awards Competition**

5A **Original Contributions: 44th Annual Scientific Session**

431A **Acknowledgments**

433A **Author Index**

467A **Subject Index**

MARCH 1, 1995 VOLUME 25 NUMBER 3

CLINICAL STUDIES

International Health Care

557 **International Comparison of Waiting Times for Selected Cardiovascular Procedures** *Richard J. Carroll, Susan D. Horn, Bjorn Soderfeldt, Brent C. James, Lars Malmberg*

564 *Editorial Comment* **International Comparisons of Waiting Times for Cardiovascular Procedures: A Commentary on the Long Queue** *Thomas J. Ryan*

Myocardial Infarction

567 **Relation of Initial Infarct Size to Extent of Left Ventricular Remodeling in the Year After Acute Myocardial Infarction** *Panithaya Chareonthaitawee, Timothy F. Christian, Ken Hirose, Raymond J. Gibbons, John A. Rumberger*

574 **Independent Prognostic Value of Serum Creatine Kinase Isoenzyme MB Mass, Cardiac Troponin T and Myosin Light Chain Levels in Suspected Acute Myocardial Infarction: Analysis of 28 Months of Follow-Up in 196 Patients** *Jan Ravkilde, Henrik Nissen, Mogens Hørder, Kristian Thygesen*

582 **Angiographic Predictors of Reocclusion After Thrombolysis: Results From the Thrombolysis in Myocardial Infarction (TIMI) 4 Trial** *C. Michael Gibson, Christopher P. Cannon, Robert N. Piana, Jeffrey A. Breall, Barry Sharaf, Margaret Flatley, Barbara Alexander, Daniel J. Diver, Carolyn H. McCabe, Greg C. Flaker, Donald S. Baim, Eugene Braunwald, for the TIMI 4 Study Group*

590 **Technetium-99m Sestamibi Tomographic Evaluation of Residual Ischemia After Anterior Myocardial Infarction** *Claudio Marcassa, Michele Galli, Pier Luigi Temporelli, Riccardo Campini, Pedro Silva Orrego, Orazio Zoccarato, Amerigo Giordano, Pantaleo Giannuzzi*

597 **Relation of Severity of Symptoms to Transient Myocardial Ischemia and Prognosis in Unstable Angina** *Raffaele Bugiardini, Alberico Borghi, Andrea Pozzati, Augusto Ruggeri, Paolo Puddu, Attilio Maseri*

605 **Optimal Stage Duration in Dobutamine Stress Echocardiography** *Neil J. Weissman, Stefan M. Nidorf, J. Luis Guerrero, Arthur E. Weyman, Michael H. Picard*

610 **Metaiodobenzylguanidine Imaging in Diabetes Mellitus: Assessment of Cardiac Sympathetic Denervation and Its Relation to Autonomic Dysfunction and Silent Myocardial Ischemia** *Anatoly Langer, Michael R. Freeman, Robert G. Josse, Paul W. Armstrong*

619 **Effect of Amlodipine, Atenolol and Their Combination on Myocardial Ischemia During Treadmill Exercise and Ambulatory Monitoring** *Richard F. Davies, Habibullah Habibi, W. Peter Klinke, Pierre Dessain, Claude Nadeau, Denis C. Phaneuf, Serge Lepage, Sankaranarayanan Raman, Margaret Herbert, Kathy Foris, Wolfgang Linden, Jennifer A. Buttars, for the Canadian Amlodipine/Atenolol in Silent Ischemia Study (CASIS) Investigators*

Coronary Artery Disease

626 **Quantification of Coronary Artery Calcium by Electron Beam Computed Tomography for Determination of Severity of Angiographic Coronary Artery Disease in Younger Patients** *Rachel B. Kaufmann, Patricia A. Peyser, Patrick F. Sheedy, John A. Rumberger, Robert S. Schwartz*

633 **An Explanation for Discrepancy Between Angiographic and Intravascular Ultrasound Measurements After Percutaneous Transluminal Coronary Angioplasty** *Shigeru Nakamura, Donald J. Mahon, Bavani Maheswaran, Dan E. Gutfinger, Antonio Colombo, Jonathan M. Tobis*

Surgery

640 **Flow Capacity of Internal Mammary Artery Grafts: Early Restriction and Later Improvement Assessed by Doppler Guide Wire. Comparison With Saphenous Vein Grafts** *Takashi Akasaka, Junichi Yoshikawa, Kiyoshi Yoshida, Kenji Maeda, Takeshi Hozumi, Michihiro Nasu, Toyo Shomura*

Electrophysiology

648 **Catheter Ablation of Permanent Junctional Reciprocating Tachycardia With Radiofrequency Current** *Fiorenzo Gaita, Michel Haissaguerre, Carla Giustetto, Bruno Fischer, Riccardo Riccardi, Elena Richiardi, Marco Scaglione, Filippo Lamberti, Jean-François Warin*

655 **Arrhythmogenic Right Ventricular Cardiomyopathy in Young Versus Adult Patients: Similarities and Differences** *Luciano Daliento, Pietro Turrini, Andrea Nava, Giulio Rizzoli, Annalisa Angelini, Gianfranco Buja, Roldano Scognamiglio, Gaetano Thiene*

665 **Aggravation of Postcardioversion Atrial Dysfunction by Sotalol** *Arthur Pollak, Rodney H. Falk*

Heart Failure

672 **Continuous Positive Airway Pressure Increases Heart Rate Variability in Congestive Heart Failure** *Gary C. Butler, Matthew T. Naughton, M. Atiar Rahman, T. Douglas Bradley, John S. Floras*

680 **Influence of Preload Reserve on Stroke Volume Response to Exercise in Patients With Left Ventricular Systolic Dysfunction: A Doppler Echocardiographic Study** *Michel Dahan, Nicolas Aubry, Serge Baleynaud, Beatrice Ferreira, Jin Yu, René Gourgon*

687 **Response to Isoproterenol as a Prognostic Indicator of Evolution From Hypertrophic Cardiomyopathy to a Phase Resembling Dilated Cardiomyopathy** *Satoru Kawano, Keiji Iida, Katsuji Fujieda, Kimihiko Yukisada, El Sersi Magdi, Yuko Iwasaki, Fumiko Tabei, Iwao Yamaguchi, Yasuro Sugishita*

Valvular Heart Disease

693 **Exercise-Induced Mitral Regurgitation Is a Predictor of Morbid Events in Subjects With Mitral Valve Prolapse** *Marcus F. Stoddard, Charles R. Prince, Susan Dillon, Rita A. Longaker, Glenn T. Morris, Norman E. Liddell*

700 ***Editorial Comment*** **Exercise-Induced Regurgitation in Mitral Valve Prolapse: Is It a New Disease?** *Robert A. Levine*

703 **Effective Mitral Regurgitant Orifice Area: Clinical Use and Pitfalls of the Proximal Isovelocity Surface Area Method** *Maurice Enriquez-Sarano, Fletcher A. Miller, Jr., Sharonne N. Hayes, Kent R. Bailey, A. Jamil Tajik, James B. Seward*

New Methods

710 **Cardiac Index Quantification by Doppler Ultrasound in Patients Without Left Ventricular Outflow Tract Abnormalities** *Arturo Evangelista, David Garcia-Dorado, Herminio Garcia del Castillo, Teresa Gonzalez-Alujas, Jordi Soler-Soler*

717 **New Method for Evaluating Left Ventricular Wall Motion by Color-Coded Tissue Doppler Imaging: In Vitro and In Vivo Studies** *Kunio Miyatake, Masakazu Yamagishi, Norio Tanaka, Masaaki Uematsu, Nobuo Yamazaki, Yoshitake Mine, Akihiro Sano, Makoto Hirama*

Pediatric Cardiology

725 **Rational Approach to Use of Heparin During Cardiac Catheterization in Children** *R. Mark Grady, Paul R. Eisenberg, Nancy D. Bridges*

730 **Balloon Angioplasty of Native Coarctation of the Aorta: Midterm Follow-Up and Prognostic Factors** *Scott E. Fletcher, Michael R. Nihill, Ronald G. Grifka, Martin P. O'Laughlin, Charles E. Mullins*

735 **Pulmonary/Systemic Flow Ratio in Children After Cavopulmonary Anastomosis** *Mubadda A. Salim, Christopher L. Case, Robert M. Sade, Donald C. Watson, Bruce S. Alpert, Thomas G. DiSessa*

739 **In Utero Pulmonary Artery and Aortic Growth and Potential for Progression of Pulmonary Outflow Tract Obstruction in Tetralogy of Fallot** *Lisa K. Hornberger, Stephen P. Sanders, David J. Sahn, Mary Jo Rice, Philip J. Spevak, Beryl R. Benacerraf, Robert W. McDonald, Steven D. Colan*

EXPERIMENTAL STUDIES

746 **Electrocardiographic Indexes of Dispersion of Ventricular Repolarization: An Isolated Heart Validation Study** *Markus Zabel, Stuart Portnoy, Michael R. Franz*

753 **Recombinant Lys-Plasminogen, but Not Glu-Plasminogen, Improves Recombinant Tissue-Type Plasminogen Activator–Induced Coronary Thrombolysis in Dogs** *Jawahar L. Mehta, Liying Chen, Wilmer W. Nichols, Marie Johannesen, Claus Bregengård, Ulla Hedner, Tom G. P. Saldeen*

761 **Selective Downregulation of Rat Cardiac Beta$_1$-Adrenoceptors by Cyclosporine A: Prevention by Diltiazem or Angiotensin-Converting Enzyme Inhibitors** *Otto-Erich Brodde, Melanie Adamczyk, Frauke Busch, Claus Bossaller, Ellen Duske, Eckart Fleck, Stephan Götze, Wolfgang Auch-Schwelk*

768 **Effects of Long-Term Therapy With Enalapril on Severity of Functional Mitral Regurgitation in Dogs With Moderate Heart Failure** *Hisashi Shimoyama, Hani N. Sabbah, Howard Rosman, Tatsuji Kono, Mohsin Alam, Sidney Goldstein*

773 **Differential Effects of Protamine Sulfate on Myocyte Contractile Function With Left Ventricular Failure** *R. Barry Hird, Fred A. Crawford, Francis G. Spinale*

781 **A Chimeric IgG4 Monoclonal Antibody Directed Against CD18 Reduces Infarct Size in a Primate Model of Myocardial Ischemia and Reperfusion** *Thomas Aversano, Wei Zhou, Mark Nedelman, Marian Nakada, Harlan Weisman*

REVIEW ARTICLE

789 **Effects of Exercise Training in Patients With Congestive Heart Failure: A Critical Review** *Robert S. McKelvie, Koon K. Teo, Neil McCartney, Dennis Humen, Terrence Montague, Salim Yusuf*

EDITOR'S PAGE

797 **Cardiology: "It's a Small World After All"** *William W. Parmley*

SPECIAL SECTIONS

ACC News

798 **President's Page: The Assault on Specialty Medicine** *Daniel J. Ullyot*

800 **American College of Cardiology, American College of Radiology and Industry Develop Standard for Digital Transfer of Angiographic Images** *ACC/ACR/NEMA Ad Hoc Group*

803 Letters to the Editor

805 Correction

806 Books Received

MARCH 15, 1995 VOLUME 25 NUMBER 4

CLINICAL STUDIES

Syndrome X

807 **Cardiac Syndrome X: Clinical Characteristics and Left Ventricular Function. Long-Term Follow-Up Study** *Juan Carlos Kaski, Giuseppe M. C. Rosano, Peter Collins, Petros Nihoyannopoulos, Attilio Maseri, Philip A. Poole-Wilson*

Myocardial Infarction

815 **Strategies for Prognostic Assessment of Uncomplicated First Myocardial Infarction: 5-Year Follow-Up Study** *Montserrat Olona, Jaume Candell-Riera, Gaietà Permanyer-Miralda, Joan Castell, José A. Barrabés, Enric Domingo, Josep Rosselló, Josep Vaqué, Jordi Soler-Soler*

Stress Testing

823 **Transesophageal Dobutamine Stress Echocardiography in the Evaluation of Coronary Artery Disease** *Stephen Frohwein, J. Larry Klein, Alberta Lane, W. Robert Taylor*

830 **Comparison of Thallium-201 Single-Photon Emission Computed Tomography and Electrocardiographic Response During Exercise in Patients With Normal Rest Electrocardiographic Results** *Nasaraiah Nallamothu, Massroor Ghods, Jaekyeong Heo, Abdulmassih S. Iskandrian*

Coronary Artery Disease

837 **Differential Progression of Complex and Smooth Stenoses Within the Same Coronary Tree in Men With Stable Coronary Artery Disease** *Michael R. Chester, Lijia Chen, Dimitris Tousoulis, Jan Poloniecki, Juan Carlos Kaski*

Interventional Cardiology

843 **Improvement of Global and Regional Left Ventricular Function by Percutaneous Transluminal Coronary Angioplasty After Myocardial Infarction** *Siniša Miketić, Joerg Carlsson, Ulrich Tebbe*

848 **Detailed Clinical and Angiographic Analysis of Transluminal Extraction Coronary Atherectomy for Complex Lesions in Native Coronary Arteries** *Robert D. Safian, Melissa A. May, Anne Lichtenberg, Theodore L. Schreiber, Gregory Pavlides, Thomas B. Meany, Cindy L. Grines, William W. O'Neill*

855 **Clinical and Lesion Morphologic Determinants of Coronary Angioplasty Success and Complications: Current Experience** *Kim Tan, Neil Sulke, Nick Taub, Edgar Sowton*

866 **Stent Implantation of Saphenous Vein Graft Aorto-Ostial Lesions in Patients With Unstable Ischemic Syndromes: Immediate Angiographic Results and Long-Term Clinical Outcome** *Eldad Rechavia, Frank Litvack, Gail Macko, Neal L. Eigler*

Hypertension

871 **Adverse Prognostic Significance of Concentric Remodeling of the Left Ventricle in Hypertensive Patients With Normal Left Ventricular Mass** *Paolo Verdecchia, Giuseppe Schillaci, Claudia Borgioni, Antonella Ciucci, Massimo Battistelli, Carlo Bartoccini, Antonella Santucci, Carla Santucci, Gianpaolo Reboldi, Carlo Porcellati*

879 **Prognosis of Left Ventricular Geometric Patterns in the Framingham Heart Study** *Harlan M. Krumholz, Martin Larson, Daniel Levy*

885 ***Editorial Comment*** **Left Ventricular Geometry, Pathophysiology and Prognosis** *Richard B. Devereux*

888 **Empiric Determination of the Transition From Concentric Hypertrophy to Congestive Heart Failure in Essential Hypertension** *Gen Shimizu, Yuzo Hirota, Keishiro Kawamura*

Cocaine Use

895 **Lack of Association of Recreational Cocaine and Alcohol Use With Left Ventricular Mass in Young Adults: The Coronary Artery Risk Development in Young Adults (CARDIA) Study** *Georgeanne S. Hoegerman, Cora E. Lewis, John Flack, James M. Raczynski, Jennifer Caveny, Julius M. Gardin*

Electrophysiology

901 **Circadian Pattern of Ventricular Tachyarrhythmias in Patients With Implantable Cardioverter-Defibrillators** *Mark A. Wood, Pippa M. Simpson, Wendy B. London, Bruce S. Stambler, John M. Herre, Robert C. Bernstein, Kenneth A. Ellenbogen*

908 **Definition of the Best Prediction Criteria of the Time Domain Signal-Averaged Electrocardiogram for Serious Arrhythmic Events in the Postinfarction Period** *Nabil El-Sherif, Pablo Denes, Richard Katz, Robert Capone, L. Brent Mitchell, Mark Carlson, Robin Reynolds-Haertle, for the Cardiac Arrhythmia Suppression Trial/Signal-Averaged Electrocardiogram (CAST/SAECG) Substudy Investigators*

915 **Effects of Oral Pirenzepine on Heart Rate Variability and Baroreceptor Reflex Sensitivity After Acute Myocardial Infarction** *Roberto F. E. Pedretti, Enrica Colombo, Simona Sarzi Braga, Luigi Ballardini, Bruno Carù*

Heart Transplantation

922 **Left Ventricular Mass Increases During Cardiac Allograft Vascular Rejection** *Edward A. Gill, Clarisa Borrego, Bruce E. Bray, Dale G. Renlund, Elizabeth H. Hammond, Edward M. Gilbert*

927 **Iodine-123 Metaiodobenzylguanidine Scintigraphic Assessment of the Transplanted Human Heart: Evidence for Late Reinnervation** *Teresa De Marco, Michael Dae, Monita S. F. Yuen-Green, Shantha Kumar, Krishnankutty Sudhir, Fraser Keith, Thomas M. Amidon, Celia Rifkin, Cindy Klinski, Debra Lau, Elias H. Botvinick, Kanu Chatterjee*

932 **Atrial Emptying With Orthotopic Heart Transplantation Using Bicaval and Pulmonary Venous Anastomoses: A Magnetic Resonance Imaging Study** *Dov Freimark, Jeffrey M. Silverman, Ivan Aleksic, John V. Crues, Carlos Blanche, Alfredo Trento, Dan Admon, Carmen A. Queral, Deborah A. Harasty, Lawrence S. C. Czer*

Methods

937 **Correspondence of Left Ventricular Ejection Fraction Determinations From Two-Dimensional Echocardiography, Radionuclide Angiography and Contrast Cineangiography** *Manish M. Naik, George A. Diamond, Tina Pai, Ariel Soffer, Robert J. Siegel*

Pediatric Cardiology

943 **Video-Assisted Thoracoscopic Vascular Ring Division in Infants and Children** *Redmond P. Burke, Howard M. Rosenfeld, Gil Wernovsky, Richard A. Jonas*

948 **Unroofed Coronary Sinus and Coronary Sinus Orifice Atresia: Implications for Management of Complex Congenital Heart Disease** *Ian Adatia, Adriana C. Gittenberger-de Groot*

SPECIAL SECTIONS

ACC News

954 **Newly Elected Members of the College**

958 **Letters to the Editor**

960 **Books Received**

APRIL 1995 VOLUME 25 NUMBER 5

SPECIAL REPORT

961 **Clinical Investigation of Antiarrhythmic Devices** *Sanjeev Saksena, Chairman*

CLINICAL STUDIES

Electrophysiology

974 **An Anatomically and Electrogram-Guided Stepwise Approach for Effective and Safe Catheter Ablation of the Fast Pathway for Elimination of Atrioventricular Node Reentrant Tachycardia** *Hans Kottkamp, Gerhard Hindricks, Stephan Willems, Xu Chen, Lutz Reinhardt, Wilhelm Haverkamp, Günter Breithardt, Martin Borggrefe*

982 ***Editorial Comment*** **Fast Pathway Ablation for Atrioventricular Node Reentrant Tachycardia** *Fred Morady*

984 **Incidence of Symptomatic Atrial Fibrillation in Patients With Paroxysmal Supraventricular Tachycardia** *Mark E. Hamer, William E. Wilkinson, Walter K. Clair, Richard L. Page, Elizabeth A. McCarthy, Edward L. C. Pritchett*

989 **Quinidine Pharmacodynamics in Patients With Arrhythmia: Effects of Left Ventricular Function** *Anne M. Gillis, L. Brent Mitchell, D. George Wyse, Margot McDonald, Henry J. Duff*

995 **Cardiac Chronotropic Responsiveness to Beta-Adrenoceptor Stimulation Is Not Reduced in the Elderly** *Don Poldermans, Eric Boersma, Paolo M. Fioretti, Hero van Urk, Frans Boomsma, Arie J. Man in' t Veld*

Coronary Artery Disease

1000 **Comparison of 15-Year Survival for Men and Women After Initial Medical or Surgical Treatment for Coronary Artery Disease: A CASS Registry Study** *Kathryn B. Davis, Bernard Chaitman, Thomas Ryan, Vera Bittner, J. Ward Kennedy*

1010 ***Editorial Comment*** **Tell Me What Ails You, and I'll Tell You Why It's Your Fault** *Ross J. Simpson, Jr.*

1013 **Long-Term Prognosis of Patients With Anginalike Chest Pain and Normal Coronary Angiographic Findings** *Paul R. Lichtlen, Klaus Bargheer, Paul Wenzlaff*

1019 **Exercise Echocardiography After Coronary Artery Bypass Surgery: Correlation With Coronary Angiography** *Henryk Kafka, Alan J. Leach, Gerald M. FitzGibbon*

1024 **Incremental Value of Simultaneous Assessment of Myocardial Function and Perfusion With Technetium-99m Sestamibi for Prediction of Extent of Coronary Artery Disease** *Walter Palmas, John D. Friedman, George A. Diamond, Haim Silber, Hosen Kiat, Daniel S. Berman*

1032 **Specificity and Sensitivity of Exercise-Induced ST Segment Elevation for Detection of Residual Viability: Comparison With Fluorodeoxyglucose and Positron Emission Tomography** *Alberto Margonato, Sergio L. Chierchia, Robert G. Xuereb, Mariosa Xuereb, Gabriele Fragasso, Alberto Cappelletti, Claudio Landoni, Giovanni Lucignani, Ferruccio Fazio*

1039 **Estimation of Coronary Flow Reserve by Transesophageal Coronary Sinus Doppler Measurements in Patients With Syndrome X and Patients With Significant Left Coronary Artery Disease** *Manfred Zehetgruber, Gerald Mundigler, Günter Christ, Deddo Mörtl, Peter Probst, Helmut Baumgartner, Gerald Maurer, Peter Siostrzonek*

1046 **Heterogeneity of Vasomotor Response to Acetylcholine Along the Human Coronary Artery** *William F. Penny, Howard Rockman, John Long, Valmik Bhargava, Ken Carrigan, Alaa Ibriham, Ralph Shabetai, John Ross, Jr., Kirk L. Peterson*

Risk Factors

1056 **Effect of Growth on Variability of Left Ventricular Mass: Assessment of Allometric Signals in Adults and Children and Their Capacity to Predict Cardiovascular Risk** *Giovanni de Simone, Richard B. Devereux, Stephen R. Daniels, Michael J. Koren, Richard A. Meyer, John H. Laragh*

Myocardial Infarction

1063 **Cardiac Rupture Associated With Thrombolytic Therapy: Impact of Time of Treatment in the Late Assessment of Thrombolytic Efficacy (LATE) Study** *Richard C. Becker, Andrew Charlesworth, Robert G. Wilcox, John Hampton, Allen Skene, Joel M. Gore, Eric J. Topol, for the Late Assessment of Thrombolytic Efficacy Investigators*

1069 **Impairment of Fibrinolysis by Streptokinase, Urokinase and Recombinant Tissue-Type Plasminogen Activator in the Presence of Radiographic Contrast Agents** *Gregory J. Dehmer, Nancy Gresalfi, Dale Daly, Bruce Oberhardt, David A. Tate*

1076 **Effect of Angina Pectoris on Myocardial Protection in Patients With Reperfused Anterior Wall Myocardial Infarction: Retrospective Clinical Evidence of "Preconditioning"** *Yusuke Nakagawa, Hiroshi Ito, Masafumi Kitakaze, Hideo Kusuoka, Masatsugu Hori, Tsunehiko Kuzuya, Yorihiko Higashino, Kenshi Fujii, Takazo Minamino*

1084 **Appearance of Abnormal Q Waves Early in the Course of Acute Myocardial Infarction: Implications for Efficacy of Thrombolytic Therapy** *Merritt H. Raitt, Charles Maynard, Galen S. Wagner, Manuel D. Cerqueira, Ron H. Selvester, W. Douglas Weaver*

1089 **Combined Captopril and Isosorbide Dinitrate During Healing After Myocardial Infarction: Effect on Ventricular Remodeling, Function, Mass and Collagen** *Bodh I. Jugdutt, Mohammad I. Khan, Sunita J. Jugdutt, Gordon E. Blinston*

1097 **Serial Changes in Left and Right Ventricular Systolic and Diastolic Dynamics During the First Year After an Index Left Ventricular Q Wave Myocardial Infarction** *Ken Hirose, Judd E. Reed, John A. Rumberger*

1105 **Comparison of Secretion Pattern Between A-Type and B-Type Natriuretic Peptides in Patients With Old Myocardial Infarction** *Hitoshi Sumida, Hirofumi Yasue, Michihiro Yoshimura, Ken Okumura, Hisao Ogawa, Kiyotaka Kugiyama, Kozaburo Matsuyama, Koichi Kikuta, Etsuo Morita, Kazuwa Nakao*

Surgery

1111 **High Risk of Thromboemboli Early After Bioprosthetic Cardiac Valve Replacement** *Magda Heras, James H. Chesebro, Valentin Fuster, William J. Penny, Diane E. Grill, Kent R. Bailey, Gordon K. Danielson, Thomas A. Orszulak, James R. Pluth, Francisco J. Puga, Hartzell V. Schaff, Jeffrey J. Larsonkeller*

1120 **Functional Evaluation of Internal Mammary Artery Bypass Grafts in the Early and Late Postoperative Periods** *Oliver Gurné, Patrick Chenu, Claude Polidori, Yves Louagie, Michel Buche, Jean-Paul Haxhe, Philippe Eucher, Baudouin Marchandise, Erwin Schroeder*

Valvular Heart Disease

1129 **Inoue Balloon Mitral Valvotomy in Patients With Severe Valvular and Subvalvular Deformity** *James R. Post, Ted Feldman, Jeffrey Isner, Howard C. Herrmann*

Interventional Cardiology

1137 **Prospective Case-Control Comparison of Percutaneous Transluminal Coronary Revascularization in Patients With Multivessel Disease Treated in 1986–1987 Versus 1991: Improved In-Hospital and 12-Month Results** *Stephen G. Ellis, Michael J. Cowley, Patrick L. Whitlow, Michel Vandormael, A. Michael Lincoff, Germano DiSciascio, Larry S. Dean, Eric J. Topol, for the Multivessel Angioplasty Prognosis Study (MAPS) Group*

Heart Failure

1143 **Preserved Right Ventricular Ejection Fraction Predicts Exercise Capacity and Survival in Advanced Heart Failure** *Thomas G. Di Salvo, Michael Mathier, Marc J. Semigran, G. William Dec*

1154 **Time Course of Improvement in Left Ventricular Function, Mass and Geometry in Patients With Congestive Heart Failure Treated With Beta-Adrenergic Blockade** *Shelley A. Hall, Carlos G. Cigarroa, Lucille Marcoux, Richard C. Risser, Paul A. Grayburn, Eric J. Eichhorn*

1162 **High Prevalence of Atrial Fibrosis in Patients With Dilated Cardiomyopathy** *Katsuhiko Ohtani, Chikao Yutani, Seiki Nagata, Yukihiro Koretsune, Masatsugu Hori, Takenobu Kamada*

1170 **Myocardial Enterovirus Infection With Left Ventricular Dysfunction: A Benign Disease Compared With Idiopathic Dilated Cardiomyopathy** *Hans R. Figulla, Michael Stille-Siegener, Gerhard Mall, Albert Heim, Heinrich Kreuzer*

New Methods

1176 **Measurement of Pulmonary Artery Diastolic Pressure From the Right Ventricle** *Dwight W. Reynolds, Nick Bartelt, Robert Taepke, Tom D. Bennett*

1183 **Immunosuppression Switch in Pediatric Heart Transplant Recipients: Cyclosporine to FK 506** *Jeanine M. Swenson, F. Jay Fricker, John M. Armitage*

1189 **Partial Atrioventricular Canal Defect: Long-Term Follow-Up After Initial Repair in Patients ≥40 Years Old** *M. Lynn Bergin, Carole A. Warnes, A. Jamil Tajik, Gordon K. Danielson*

1195 **Flecainide and Amiodarone: Combined Therapy for Refractory Tachyarrhythmias in Infancy** *Arnold L. Fenrich, Jr., James C. Perry, Richard A. Friedman*

EXPERIMENTAL STUDIES

1199 **Nature of Flow Acceleration Into a Finite-Sized Orifice: Steady and Pulsatile Flow Studies on the Flow Convergence Region Using Simultaneous Ultrasound Doppler Flow Mapping and Laser Doppler Velocimetry** *Robin Shandas, Morteza Gharib, David J. Sahn*

1213 **Endothelin Receptor Antagonists in a Beagle Model of Pulmonary Hypertension: Contribution to Possible Potential Therapy?** *Morihito Okada, Chojiro Yamashita, Masayoshi Okada, Kenji Okada*

EDITOR'S PAGE

1218 **Revised Cardiology Training Guidelines: Time and Numbers** *William W. Parmley*

SPECIAL SECTIONS

ACC News

1220 **1995–1996 Board of Governors**

1223 **Letters to the Editor**

1224 **Books Received**

MAY 1995 VOLUME 25 NUMBER 6

CLINICAL STUDIES

Heart Failure

1225 **Carvedilol Improves Left Ventricular Function and Symptoms in Chronic Heart Failure: A Double-Blind Randomized Study** *Stephanie L. Olsen, Edward M. Gilbert, Dale G. Renlund, David O. Taylor, Frank D. Yanowitz, Michael R. Bristow*

1232 **Exercise Intolerance in Chronic Heart Failure Is Not Associated With Impaired Recovery of Muscle Function or Submaximal Exercise Performance** *Mohamad H. Yamani, Puneet Sahgal, Lauren Wells, Barry M. Massie*

1239 **Physical Training in Patients With Stable Chronic Heart Failure: Effects on Cardiorespiratory Fitness and Ultrastructural Abnormalities of Leg Muscles** *Rainer Hambrecht, Josef Niebauer, Eduard Fiehn, Barbara Kälberer, Bertram Offner, Klaus Hauer, Urs Riede, Günter Schlierf, Wolfgang Kübler, Gerhard Schuler*

1250 **Relations Between Heart Failure, Ejection Fraction, Arrhythmia Suppression and Mortality: Analysis of the Cardiac Arrhythmia Suppression Trial** *Al Hallstrom, Craig M. Pratt, H. Leon Greene, Melissa Huther, Stephen Gottlieb, Anthony DeMaria, James B. Young, for the Cardiac Arrhythmia Suppression Trial Investigators*

1258 **Heterogeneity of Ventricular Function and Myocardial Oxidative Metabolism in Nonischemic Dilated Cardiomyopathy** *David S. Bach, Rob S. B. Beanlands, Markus Schwaiger, William F. Armstrong*

1263 **Dilated Cardiomyopathy Is Associated With an Increase in the Type I/Type III Collagen Ratio: A Quantitative Assessment** *Monique M. H. Marijianowski, Peter Teeling, Jessica Mann, Anton E. Becker*

1273 **Renal Response to Candoxatrilat in Patients With Heart Failure** *Joanna M. Good, Michael Peters, Martin Wilkins, Neville Jackson, Celia M. Oakley, John G. F. Cleland*

Myocardial Ischemia

1282 **Angioscopic Identification of Coronary Thrombus in Patients With Postinfarction Angina** *Hirotsugu Tabata, Kyoichi Mizuno, Koh Arakawa, Kimio Satomura, Toshio Shibuya, Akira Kurita, Haruo Nakamura*

1286 **Incidence and Follow-Up of Braunwald Subgroups in Unstable Angina Pectoris** *Addy J. M. van Miltenburg-van Zijl, Maarten L. Simoons, Rinus J. Veerhoek, Patrick M. M. Bossuyt*

1293 ***Editorial Comment*** **Toward a Stable Clinical Classification of Unstable Angina** *Joann Lindenfeld, Douglas A. Morrison*

1295 **Effectiveness of Prolonged Low Dose Recombinant Tissue-Type Plasminogen Activator for Refractory Unstable Angina** *Francesco Romeo, Giuseppe M. C. Rosano, Eugenio Martuscelli, Michele Comito, Nicola Cardona, Corrado Colistra, Biagio Milano, Cesare Bianco, Vito Rosano*

1300 **Adenosine Combined With Dynamic Exercise for Myocardial Perfusion Imaging** *Dudley J. Pennell, Sophie I. Mavrogeni, Sandra M. Forbat, Stefan P. Karwatowski, S. Richard Underwood*

1310 **Anatomic and Physiologic Heterogeneity in Patients With Syndrome X: An Intravascular Ultrasound Study** *Joseph G. Wiedermann, Allan Schwartz, Mark Apfelbaum*

1318 *Editorial Comment* **The Continuing Conundrum of Syndrome X: Further Evidence of Heterogeneity** *Martin A. Alpert*

1321 **ST Segment and T Wave Characteristics as Indicators of Coronary Heart Disease Risk: The Zutphen Study** *Jacqueline M. Dekker, Evert G. Schouten, Peter Klootwijk, Jan Pool, Daan Kromhout*

MYOCARDIAL INFARCTION

1327 **Treatment With Beta-Adrenergic Blocking Agents After Myocardial Infarction: From Randomized Trials to Clinical Practice** *Sami Viskin, Ilan Kitzis, Eli Lev, Zeev Zak, Karin Heller, Yael Villa, Alejandro Zajarias, Shlomo Laniado, Bernard Belhassen*

1333 **Role of Adenosine Thallium-201 Tomography for Defining Long-Term Risk in Patients After Acute Myocardial Infarction** *John J. Mahmarian, Angela C. Mahmarian, Gary F. Marks, Craig M. Pratt, Mario S. Verani*

1341 **Doppler Left Ventricular Flow Pattern Versus Conventional Predictors of Left Ventricular Thrombus After Acute Myocardial Infarction** *Jan M. Van Dantzig, Ben J. Delemarre, Hans Bot, Rudolph W. Koster, Cees A. Visser*

ELECTROPHYSIOLOGY

1347 **Efficacy and Tolerability of Transvenous Low Energy Cardioversion of Paroxysmal Atrial Fibrillation in Humans** *Francis D. Murgatroyd, Alistair K. B. Slade, S. Mark Sopher, Edward Rowland, David E. Ward, A. John Camm*

1354 **Transesophageal Echocardiographically Facilitated Early Cardioversion From Atrial Fibrillation Using Short-Term Anticoagulation: Final Results of a Prospective 4.5-Year Study** *Warren J. Manning, David I. Silverman, Craig S. Keighley, Peter Oettgen, Pamela S. Douglas*

1362 *Editorial Comment* **Transesophageal Echocardiographic Screening for Atrial Thrombus Before Cardioversion of Atrial Fibrillation: When Should We Look Before We Leap?** *Anthony C. Pearson*

1365 **Radiofrequency Catheter Ablation of Common Atrial Flutter in 80 Patients** *Bruno Fischer, Michel Haissaguerre, Stephane Garrigues, Franck Poquet, Laurent Gencel, Jacques Clementy, Frank I. Marcus*

1373 **Comparison of Defibrillation Probability of Success Curves for an Endocardial Lead Configuration With and Without an Inactive Epicardial Patch** *Richard L. Callihan, Salim F. Idriss, Roger W. Dahl, Patrick D. Wolf, William M. Smith, Raymond E. Ideker*

INTERVENTIONAL CARDIOLOGY

1380 **Directional Atherectomy Versus Balloon Angioplasty for Coronary Ostial and Nonostial Left Anterior Descending Coronary Artery Lesions: Results From a Randomized Multicenter Trial** *James D. Boehrer, Stephen G. Ellis, Karen Pieper, David R. Holmes, Gordon P. Keeler, Darrell Debowey, Anthony T. Chapekis, Fred Leya, Michael R. Mooney, Ronald S. Gottlieb, Patrick W. Serruys, Robert M. Califf, Eric J. Topol, for the CAVEAT-I Investigators*

VALVULAR HEART DISEASE

1387 **Coronary Blood Flow Reserve in Acute Aortic Regurgitation** *Abbas Ardehali, Jerome Segal, Melvin D. Cheitlin*

VASCULAR DISEASE

1393 **Frequency and Explanation of False Negative Diagnosis of Aortic Dissection by Aortography and Transesophageal Echocardiography** *Ramesh C. Bansal, Krishnaswamy Chandrasekaran, Kaliprasad Ayala, Douglas C. Smith*

ENDOTHELIAL FUNCTION

1402 **Endothelium-Derived Relaxing Factor Is Important in Mediating the High Output State in Chronic Severe Anemia** *Inder S. Anand, Yellapragada Chandrashekhar, Gurpreet S. Wander, Livtar S. Chawla*

DIABETES

1408 **Increased Echodensity of Myocardial Wall in the Diabetic Heart: An Ultrasound Tissue Characterization Study** *Vitantonio Di Bello, Luigi Talarico, Eugenio Picano, Carmine Di Muro, Luigi Landini, Marco Paterni, Elena Matteucci, Costantino Giusti, Ottavio Giampietro*

PEDIATRIC CARDIOLOGY

1416 **Intraaortic Spring Coil Loops: Early and Late Results** *Rajiv Verma, Barbara G. Lock, Stanton B. Perry, Phillip Moore, John F. Keane, James E. Lock*

1420 **Exercise Capacity and Incidence of Myocardial Perfusion Defects After Kawasaki Disease in Children and Adolescents** *Stephen M. Paridon, Frank M. Galioto, Julie A. Vincent, Teresa L. Tomassoni, Nancy M. Sullivan, J. Timothy Bricker*

1425 *Editorial Comment* **Kawasaki Disease: Unsafe at Any Age?** *Bertrand A. Ross*

1428 **Interaction Between Afterload and Contractility in the Newborn Heart: Evidence of Homeometric Autoregulation in the Intact Circulation** *Robert Johannes Menno Klautz, David Frank Teitel, Paul Steendijk, Frank van Bel, Jan Baan*

EXPERIMENTAL STUDIES

1436 **Echocardiographic Fourier Phase and Amplitude Imaging for Quantification of Ischemic Regional Wall Asynergy: An Experimental Study Using Coronary Microembolization in Dogs** *Helmut F. Kuecherer, Wolfgang Schoels, Larry D. Sterns, Kirsten Freigang, Gaspar-da-Silva Kleber, Johannes Brachmann, Wolfgang Kuebler*

1445 **Effect of Low Dose Aspirin on Cardiorenal Function and Acute Hemodynamic Response to Enalaprilat in a Canine Model of Severe Heart Failure** *Mark A. Evans, John C. Burnett, Jr., Margaret M. Redfield*

1451 **Intracoronary Irradiation Markedly Reduces Neointimal Proliferation After Balloon Angioplasty in Swine: Persistent Benefit at 6-Month Follow-Up** *Joseph G. Wiedermann, Charles Marboe, Howard Amols, Allan Schwartz, Judah Weinberger*

1457 **Effects of Heating on Impulse Propagation in Superfused Canine Myocardium** *Timothy A. Simmers, Jacques M. T. De Bakker, Fred H. M. Wittkampf, Richard N. W. Hauer*

ACP/ACC/AHA TASK FORCE STATEMENT

1465 **Clinical Competence in Electrocardiography: A Statement for Physicians From the ACP/ACC/AHA Task Force on Clinical Privileges in Cardiology** *Charles Fisch, Lead Author*

EDITOR'S PAGE

1470 **Peer Review or Poor Review?** *William W. Parmley*

SPECIAL SECTIONS

1472 LETTERS TO THE EDITOR

JUNE 1995 VOLUME 25 NUMBER 7

CLINICAL STUDIES

CORONARY ARTERY DISEASE

1479 **Atherosclerosis in Angiographically "Normal" Coronary Artery Reference Segments: An Intravascular Ultrasound Study With Clinical Correlations** *Gary S. Mintz, Jack A. Painter, Augusto D. Pichard, Kenneth M. Kent, Lowell F. Satler, Jeffrey J. Popma, Ya Chien Chuang, Theresa A. Bucher, Lisa E. Sokolowicz, Martin B. Leon*

1486 **Quantitative Angiographic Measurements of Isolated Left Anterior Descending Coronary Artery Stenosis: Correlation With Exercise Echocardiography and Technetium-99m 2-Methoxy Isobutyl Isonitrile Single-Photon Emission Computed Tomography** *Mariarosaria Arnese, Alessandro Salustri, Paolo M. Fioretti, Jan H. Cornel, Eric Boersma, Ambroos E. M. Reijs, Pim J. de Feyter, Jos R. T. C. Roelandt*

1492 **Controlled Trial of Fish Oil for Regression of Human Coronary Atherosclerosis** *Frank M. Sacks, Peter H. Stone, C. Michael Gibson, David I. Silverman, Bernard Rosner, Richard C. Pasternak, for the HARP Research Group*

MYOCARDIAL ISCHEMIA

1499 **Psychophysical Responses to a Speech Stressor: Correlation of Plasma Beta-Endorphin Levels at Rest and After Psychological Stress With Thermally Measured Pain Threshold in Patients With Coronary Artery Disease** *David S. Sheps, Martha N. Ballenger, Guy E. De Gent, Rungroj Krittayaphong, Eileen Dittman, William Maixner, William McCartney, Robert N. Golden, Gary Koch, Kathleen C. Light*

1504 ***Editorial Comment*** **Mental Stress, Pain Perception and Risk of Silent Ischemia** *Prakash C. Deedwania*

1507 **Magnitude of Myocardial Dysfunction Is Greater in Painful Than in Painless Myocardial Ischemia: An Exercise Echocardiographic Study** *Petros Nihoyannopoulos, Antonis Marsonis, Jayshree Joshi, George Athanassopoulos, Celia M. Oakley*

1513 ***Editorial Comment*** **Is Silent Ischemia Painless Because It Is Mild?** *Thomas H. Marwick*

1516 **Selection of Medical Treatment in Stable Angina Pectoris: Results of the International Multicenter Angina Exercise (IMAGE) Study** *Diego Ardissino, Stefano Savonitto, Kenneth Egstrup, Klaus Rasmussen, Erling A. Bae, Tor Omland, Per M. Schjelderup-Mathiesen, Paolo Marraccini, Piera Angelica Merlini, Inger Wahlqvist, Nina Rehnqvist, on Behalf of the IMAGE Study Group*

1522 **Quantification of Recruitable Coronary Collateral Blood Flow in Conscious Humans and Its Potential to Predict Future Ischemic Events** *Nico H. J. Pijls, G. Jan Willem Bech, Mamdouh I. H. El Gamal, Hans J. R. M. Bonnier, Bernard De Bruyne, Berry Van Gelder, H. Rolf Michels, Jacques J. Koolen*

1529 **Simultaneous Assessment of Myocardial Perfusion and Left Ventricular Function During Transient Coronary Occlusion** *Donna M. Gallik, Steve D. Obermueller, Udaya S. Swarna, Gerald W. Guidry, John J. Mahmarian, Mario S. Verani*

1539 **Residual Exertional Ischemia and Unfavorable Left Ventricular Remodeling in Patients With Systolic Dysfunction After Anterior Myocardial Infarction** *Pantaleo Giannuzzi, Claudio Marcassa, Pier L. Temporelli, Michele Galli, Ugo Corrà, Alessandro Imparato, Pedro Silva, Marinella Gattone, Riccardo Campini, Amerigo Giordano, Luigi Tavazzi*

1547 **Effects of Short-Term Aminophylline Administration on Cardiac Functional Reserve in Patients With Syndrome X** *Hiroyuki Yoshio, Masami Shimizu, Yoshihito Kita, Hidekazu Ino, Bunji Kaku, Junichi Taki, Ryoyu Takeda*

THROMBOLYSIS

1552 **Noninvasive Assessment of Speed and Stability of Infarct-Related Artery Reperfusion: Results of the GUSTO ST Segment Monitoring Study** *Anatoly Langer, Mitchell W. Krucoff, Peter Klootwijk, Rolf Veldkamp, Maarten L. Simoons, Christopher Granger, Robert M. Califf, Paul W. Armstrong, for the GUSTO Investigators*

1558 **Improved Posterobasal Segment Function After Thrombolysis Is Associated With Decreased Incidence of Significant Mitral Regurgitation in a First Inferior Myocardial Infarction** *Alexander Tenenbaum, Jonathan Leor, Michael Motro, Hanoch Hod, Elieser Kaplinsky, Babeth Rabinowitz, Valentina Boyko, Zvi Vered*

ELECTROPHYSIOLOGY

1564 **Spontaneous Sequences of Onset of Torsade de Pointes in Patients With Acquired Prolonged Repolarization: Quantitative Analysis of Holter Recordings** *Emanuela H. Locati, Pierre Maison-Blanche, Patrick Dejode, Bruno Cauchemez, Philippe Coumel*

1576 **Clinical Predictors of the Defibrillation Threshold With the Unipolar Implantable Defibrillation System** *Merritt H. Raitt, George Johnson, G. Lee Dolack, Jeanne E. Poole, Peter J. Kudenchuk, Gust H. Bardy*

1584 **QRST Time Integral Values in 12-Lead Electrocardiograms Before and After Radiofrequency Catheter Ablation in Patients With Wolff-Parkinson-White Syndrome** *Tetsuo Yanagawa, Makoto Hirai, Hiroshi Hayashi, Hiroaki Sano, Yasushi Tomita, Yasuya Inden, Hidehiko Saito*

1591 **Endocardial Mapping of Ventricular Tachycardia in the Intact Human Ventricle. III. Evidence of Multiuse Reentry With Spontaneous and Induced Block in Portions of Reentrant Path Complex** *Eugene Downar, Junichi Saito, J. Colin Doig, Thomas C. K. Chen, Elias Sevaptsidis, Stephane Masse, Shane Kimber, Lynda Mickleborough, Louise Harris*

1601 **Insights Into the Electrophysiology Study Versus Electrocardiographic Monitoring Trial: Its Programmed Stimulation Protocol May Introduce Bias When Assessing Long-Term Antiarrhythmic Drug Therapy** *Lee A. Biblo, Mark D. Carlson, Albert L. Waldo*

1605 **Effect of First-Phase Polarity of Biphasic Shocks on Defibrillation Threshold With a Single Transvenous Lead System** *S. Adam Strickberger, K. Ching Man, Emile Daoud, Maureen P. Neary, Laura E. Horwood, Mark Niebauer, John D. Hummel, Fred Morady*

1609 **Sympathetic Activation, Ventricular Repolarization and I_{kr} Blockade: Implications for the Antifibrillatory Efficacy of Potassium Channel Blocking Agents** *Emilio Vanoli, Silvia G. Priori, Hiroshi Nakagawa, Kenzo Hirao, Carlo Napolitano, Livia Diehl, Ralph Lazzara, Peter J. Schwartz*

SYNCOPE

1615 **Incidence and Hemodynamic Characteristics of Near-Fainting in Healthy 6- to 16-Year Old Subjects** *Catherine C. E. de Jong-de Vos van Steenwijk, Wouter Wieling, Judith M. Johannes, Mark P. Harms, Wietse Kuis, Karel H. Wesseling*

Heart Failure

1622 **Deletion-Type Allele of the Angiotensin-Converting Enzyme Gene Is Associated With Progressive Ventricular Dilation After Anterior Myocardial Infarction** *Yigal M. Pinto, Wiek H. van Gilst, J. Herre Kingma, Heribert Schunkert, for the Captopril and Thrombolysis Study Investigators*

1627 **Lack of Association Between the Insertion/Deletion Polymorphism of the Angiotensin-Converting Enzyme Gene and Idiopathic Dilated Cardiomyopathy** *Hugh E. Montgomery, Phillip J. Keeling, Jonathen H. Goldman, Stephen E. Humphries, Philippa J. Talmud, William J. McKenna*

1632 ***Editorial Comment*** **Molecular Genetics Crying Wolf? The Case of the Angiotensin-Converting Enzyme Gene and Cardiovascular Disease** *Klaus Lindpaintner, Marc A. Pfeffer*

1634 **The Coagulation System Is Activated in Idiopathic Cardiomyopathy** *Keiji Yamamoto, Uichi Ikeda, Kyoko Furuhashi, Masahiko Irokawa, Toshio Nakayama, Kazuyuki Shimada*

1641 **Clinicopathologic Characteristics of Elderly Patients With Persistent ST Segment Elevation and Inverted T Waves: Evidence of Insidious or Healed Myocarditis?** *Kouji Chida, Shin-ichiro Ohkawa, Yukiyoshi Esaki*

Surgery

1650 **Referral for Coronary Artery Revascularization Procedures After Diagnostic Coronary Angiography: Evidence for Gender Bias?** *Malcolm R. Bell, Peter B. Berger, David R. Holmes, Jr., Charles J. Mullany, Kent R. Bailey, Bernard J. Gersh*

Heart Transplantation

1656 **Inhaled Nitric Oxide and Hemodynamic Evaluation of Patients With Pulmonary Hypertension Before Transplantation** *Ian Adatia, Stanton Perry, Michael Landzberg, Philip Moore, John E. Thompson, David L. Wessel*

1665 **Dobutamine Stress Echocardiography in Orthotopic Heart Transplant Recipients** *Geneviève Derumeaux, Michel Redonnet, Dominique Mouton-Schleifer, Jean Paul Bessou, Alain Cribier, Nadir Saoudi, René Koning, Robert Soyer, Brice Letac*

1673 **Prevalence and Prognostic Significance of Atrial Arrhythmias After Orthotopic Cardiac Transplantation** *Behzad B. Pavri, Sean S. O'Nunain, John B. Newell, Jeremy N. Ruskin, G. William Dec*

Interventional Cardiology

1681 **Coronary Angioscopy of Abrupt Occlusion After Angioplasty** *Christopher J. White, Stephen R. Ramee, Tyrone J. Collins, Suresh P. Jain, Alvaro Escobar*

1685 **Rapid Arterial Hemostasis and Decreased Access Site Complications After Cardiac Catheterization and Angioplasty: Results of a Randomized Trial of a Novel Hemostatic Device** *William G. Kussmaul III, Maurice Buchbinder, Patrick L. Whitlow, Umit T. Aker, Richard R. Heuser, Spencer B. King, Kenneth M. Kent, Martin B. Leon, Daniel M. Kolansky, Joseph G. Sandza, Jr.*

1693 **Characteristics and Consequences of Myocardial Infarction After Percutaneous Coronary Intervention: Insights From the Coronary Angioplasty Versus Excisional Atherectomy Trial (CAVEAT)** *Robert A. Harrington, A. Michael Lincoff, Robert M. Califf, David R. Holmes, Jr., Lisa G. Berdan, Mary Ann O'Hanesian, Gordon P. Keeler, Kirk N. Garratt, E. Magnus Ohman, Daniel B. Mark, Alice K. Jacobs, Eric J. Topol, for the CAVEAT Investigators*

1700 **Comparative Results of Transluminal Extraction Coronary Atherectomy in Saphenous Vein Graft Lesions With and Without Thrombus** *Mark Dooris, Melissa Hoffmann, Sue Glazier, Nadine Juran, Venu Reddy, Cindy L. Grines, Gregory S. Pavlides, Theodore Schreiber, William W. O'Neill, Robert D. Safian*

1706 **Quantitative Assessment of Myocardial Ultrasound Tissue Characterization Through Receiver Operating Characteristic Analysis of Bayesian Classifiers** *Robert F. Wagner, Keith A. Wear, Julio E. Perez, Janet B. McGill, Kenneth B. Schechtman, James G. Miller*

Pediatric Cardiology

1712 **Cardiac Catheterization and Test Occlusion of the Interatrial Communication After the Fenestrated Fontan Operation** *Nancy D. Bridges, James E. Lock, John E. Mayer, Jr., Janice Burnett, Aldo R. Castaneda*

EXPERIMENTAL STUDIES

1718 **Effect of Captopril and Enalapril on Left Ventricular Geometry, Function and Collagen During Healing After Anterior and Inferior Myocardial Infarction in a Dog Model** *Bodh I. Jugdutt*

REVIEW ARTICLE

1726 **Heart Rate Adjustment of ST Segment Depression and Performance of the Exercise Electrocardiogram: A Critical Evaluation** *Peter M. Okin, Paul Kligfield*

EDITOR'S PAGE

1736 **The Tobacco Industry—Blowing Smoke** *William W. Parmley*

SPECIAL SECTIONS

ACC Position Statement

1738 **Use of Radiographic Devices by Cardiologists** *Jeffrey A. Brinker, Lead Author*

1740 **Letters to the Editor**

1744 **Books Received**

Indexes

1745 **Author Index: Volume 25**

1749 **Subject Index: Volume 25**

JUNE 1995 VOLUME 25 NUMBER 7 (SUPPLEMENT)

Interventions in the Treatment of Acute Myocardial Infarction
K. Peter Rentrop

1S **Restoration of Anterograde Flow in Acute Myocardial Infarction: The First 15 Years** *K. Peter Rentrop*

3S **Time to Thrombolytic Treatment: Factors Affecting Delay and Influence on Outcome** *W. Douglas Weaver*

10S **Lessons We Have Learned From the GUSTO Trial** *David R. Holmes, Jr., Robert M. Califf, Eric J. Topol*

18S **Current Issues Concerning Thrombolytic Therapy for Acute Myocardial Infarction** *Charles H. Hennekens, Christopher J. O'Donnell, Paul M. Ridker, Victor J. Marder*

23S **Antithrombotic Therapy for Acute Myocardial Infarction** *Christopher J. O'Donnell, Paul M. Ridker, Patricia R. Hebert, Charles H. Hennekens*

30S **Hirudin: Initial Results in Acute Myocardial Infarction, Unstable Angina and Angioplasty** *Christopher P. Cannon, Eugene Braunwald*

38S **Cost and Quality of Life: Thrombolysis and Primary Angioplasty** *Lee Goldman*

42S **Angiotensin-Converting Enzyme Inhibitors After Myocardial Infarction: Indications and Timing** *Stephen G. Ball, Alistair S. Hall, Gordon D. Murray*

47S **Indications for Immediate Angiotensin-Converting Enzyme Inhibition in Patients With Acute Myocardial Infarction** *Thierry H. LeJemtel, Judith S. Hochman, Edmund H. Sonnenblick*